WESTERN UNIVERSITY
DAN DEPARTMENT OF MANAGEMENT AND ORGANIZATIONAL STUDIES

MOS 3370A: MANAGEMENT ACCOUNTING

Mid-Term Exam

Monday, October 19, 2020

9:30 AM to 12:30 PM – 3 hours

Instructions:

- You can use your textbook (including etext) and notes for the exam
- You will be required to keep your video on for the entire session
- You will need to have your student card readily available since you will be required to display it to the camera when requested
- You must be prepared to share your screen if requested by the Proctor
- You are required to handwrite your responses for each question on a new page. Write your name at the top of every page in the right-hand corner
- No speaking, no earphones/airpods/listening devices and no correspondence with others during the exam
- You should be in a room by yourself
- If you have a question, raise your hand using the Zoom function. You can direct message your Proctor as well.
- Any distribution of the exam is considered an Academic Offence
- At the conclusion of the exam you are required to take a photo or scan and upload your exam to the assignment dropbox. **No JPEG files allowed since they require too much space.** Your scan or pictures should be in PDF format

Upon Exam Completion:

- Advise your Proctor that you are ready to submit your exam paper
- Upload your exam to the Assignments Folder on the course site
- Advise your Proctor once your exam has been uploaded
- **Do not leave the room until your submission has been confirmed**

- There are 9 questions with possible marks as follows:

1	15
2	14
3	9
4	13
5	18
6	12

7	6
8	10
9	28

Question 1 – show all work – 15 marks

The following data (in thousands of dollars) have been taken from the accounting records of MacKenzie Capital Corporation for the year ended December 31, 2019:

Sales		1,000
Direct Labour		250
Finished goods inventory - beginning		150
Finished goods inventory - ending		140
Selling expenses		130
Raw material purchases		125
Indirect labour		95
Administrative expenses		85
Raw materials inventory - ending		80
Work in process inventory - beginning		50
Rent- factory		45
Insurance - factory		35
Work in process inventory - ending		30
Indirect materials		20
Maintenance - factory		20
Raw materials inventory - beginning		20
Rent - administration		15
Depreciation - sales vehicles		10

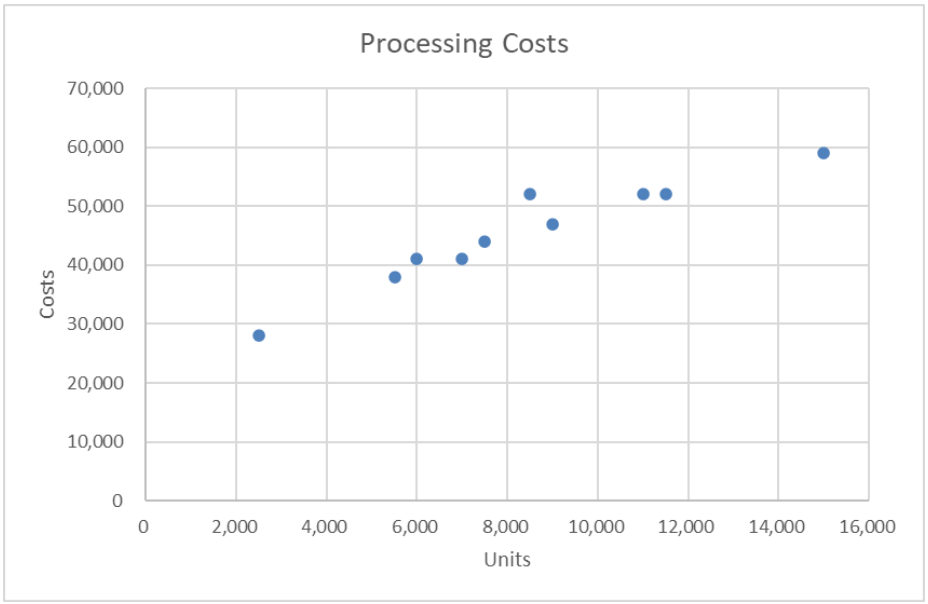
Required:

(a.) Prepare a schedule of cost of goods manufactured in good form.
(b.) Prepare an income statement in good form.

Question 2 – show all work – 14 marks

The graph below was produced after recording the processing costs of Johnson Products observed over the last 10 months using the following data:

Month	Units Produced	Processing Costs
1	7,500	$44,000
2	11,000	52,000
3	15,000	59,000
4	5,500	38,000
5	9,000	47,000
6	8,500	52,000
7	2,500	28,000
8	7,000	41,000
9	11,500	52,000
10	6,000	41,000



Required:

a. Using the graph, estimate the monthly fixed costs.
b. The chart above indicates total processing costs of $47,000 at a level of 9,000 units for month five. Using this level of activity and your fixed costs determined in a, calculate the variable cost per unit to the nearest cent. Express your results in the form of a linear equation y = a + bx.
c. Use the high low method to determine the variable cost per unit and fixed cost per month. Express your results in the form of a linear equation y = a + bx.
d. Comment on the differences between the results in b and c. Which result would you consider more accurate and why?

Question 3 – show all work – 9 marks

Piper Ltd. has determined the following costs for making one unit of its only product:

Direct materials	$6.00
Direct labour	4.00
	$10.00

The company is, however, not sure of the behaviour of its manufacturing overhead. The controller therefore ran a simple regression based on 20 pairs of monthly observations and obtained the following results:

Y = $6,000 + 1.50X

Y represents total monthly manufacturing overhead costs while X represents total monthly manufacturing direct labour costs.

The controller also estimated that selling and administration costs, which she considers to be fixed, would amount to $21,200 for the period.

Required:

What is the company's monthly breakeven sales in units at a selling price of $20.00 per unit?

Question 4 – show all work – 13 marks

Dr. Armstrong performs a certain cosmetic dental procedure at her dentistry clinic. Her monthly fixed operating costs are $12,000, while her after-tax operating income is $8,000 when she performs 200 such procedures in a month. Dr. Armstrong's before-tax operating income is subject to a marginal tax rate of 60%.

Required:

a) What is the margin of safety percentage for Dr. Armstrong, assuming she performs 200 procedures?
b) What is the degree of operating leverage for Dr. Armstrong, again assuming she performs 200 procedures?

Question 5 – show all work – 18 marks

Y Company reported the following actual cost data for the year:

Purchase of raw materials (all direct)	$200,000
Direct labour (average hourly rate of $20)	320,000
Manufacturing overhead costs (actual)	100,000
Inventories:	
Ending raw materials (all direct)	$95,000
Beginning raw materials (all direct)	75,000
Ending work in process	21,000
Beginning work in process	5,000
Ending finished goods	57,000
Beginning finished goods	25,000

Y Company used a predetermined overhead rate based on direct labour hours. Estimated annual manufacturing overhead cost and direct labour hours were $150,000 and 20,000, respectively.

Required:

a. What was the pre-determined manufacturing overhead rate?
b. Calculate the cost of goods manufactured.
c. What was the cost of goods sold before adjusting for any under or overapplied overhead?
d. By how much was manufacturing overhead cost under or overapplied?
e. Prepare a summary journal entry to close any under or overapplied manufacturing overhead cost.

Question 6 – show all work – 12 marks

Nathan Jones is a sole proprietorship that provides consulting and tax preparation services to its clients. Nathan charges a fee of $100 per hour for each service and can devote a maximum of 4,000 hours annually to his clients. He reported the following revenues and expenses for 2019:

Revenue		$400,000
Expenses (All overhead costs):		
Administrative support	$84,000	
Supplies	72,000	
Computer costs	48,000	204,000
Net income (loss)		$196,000

Being an accountant, Nathan kept good records of the following data for 2019:

(i). Revenue:

Tax preparation	$130,000
Consulting	270,000
Total	$400,000

(ii).

		ACTIVITY LEVEL		
Overhead Cost	**Cost Driver**	**Tax**	**Consulting**	**Total**
Administrative support	Number of clients	72	48	120
Supplies	Transactions with clients	200	300	500
Computer costs	Computer hours	1,000	600	1,600

Required:

a. Should Nathan emphasize one service more than the other if Nathan were to allocate all the overhead costs using direct labour hours as the only overhead cost driver (1,300 for Tax and 2,700 for Consulting)? Support your decision with the relevant calculations and/or analysis.

b. How might Nathan's product/service emphasis decision in **Part a** above be altered if he were to allocate all the overhead costs using activity-based costing and the three cost drivers, that is, number of clients, number of transactions with clients, and computer hours? Show all your supporting calculations and/or analysis, including any necessary explanation.

Question 7 – show all work – 6 marks

Data concerning ABC Golf Balls Inc. operations for last year appear below:

Units in beginning inventory	0
Units in ending inventory	10,000
Units sold	60,000
Selling price per unit	$12.00
Variable costs per unit:	
Direct materials	$2.00
Direct labour	$1.00
Variable manufacturing overhead	$1.00
Variable selling and administrative	$1.50
Fixed costs:	
Fixed manufacturing overhead	$140,000
Fixed selling and administrative	$150,000

Required:

a) Compute unit product costs using variable costing.
b) Compute unit product costs using absorption costing.

Question 8 – show all work – 10 marks

The Jones Company manufactures and sells a unique electronic part. The company's plant is highly automated with low variable and high fixed manufacturing costs. Operating results on an absorption costing basis for the first three years of activity were as follows:

	Year 1	Year 2	Year 3
Sales	$704,000	$528,000	$704,000
Cost of goods sold:			
Beginning inventory	0	0	220,000
Cost of goods manufactured	520,000	550,000	496,000
Ending inventory	0	(220,000)	(186,000)
Cost of goods sold	520,000	330,000	530,000
Gross margin	184,000	198,000	174,000
Less selling and administrative expense	180,000	160,000	180,000
Operating income (loss)	$4,000	$38,000	$(6,000)
Sales in units	40,000	30,000	40,000
Production in units	40,000	50,000	32,000

Additional information about the company is as follows:

-Variable manufacturing costs (direct labour, direct materials, and variable manufacturing overhead) total $3 per unit, and fixed manufacturing overhead costs total $400,000.
-Fixed manufacturing costs are applied to units of product on the basis of the number of units produced each year (i.e., a new fixed overhead rate is computed each year).
-The company uses a FIFO inventory flow assumption.
-Variable selling and administrative expenses are $2 per unit sold. Fixed selling and administrative expenses total $100,000.

Required:

a) Compute operating income for year 2 and 3 under the variable costing approach.
b) Prepare a reconciliation from your Operating Income (loss) under variable costing to Absorption Costing operating income for year 3.

Question 9 – show all work – 28 marks

Western Inc. uses a process costing system. The following data concern the operations of the company's first processing department for a recent month:

Beginning WIP:	
Units in process	4,500
Stage of completion with respect to materials	80%
Stage of completion with respect to conversion	60%
Costs in beginning WIP:	
Materials cost	$16,920
Conversion cost	$106,920
Units during the month:	
Units started into production during the month	21,000
Units completed and transferred out	18,400
Costs added to production during the month:	
Materials cost	$93,645
Conversion cost	$825,531
Ending WIP:	
Stage of completion with respect to materials	70%
Stage of completion with respect to conversion	50%

Required:

1) Prepare a production report for the department using the Weighted Average method.

2) Prepare a production report for the department using the FIFO method.